United States Patent [19]

Cline

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[54] **ENVIRONMENTALLY SEALED PIEZOELECTRIC SENSING ASSEMBLY FOR ELECTRICAL SWITCH**

[76] Inventor: **David J. Cline**, 9 Loma Ave., Long Beach, Calif. 90803

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[52] **U.S. Cl.** ..... **310/339**; 310/330; 200/181; 340/365 A

[58] **Field of Search** ..... 310/338, 339, 330–332, 310/322, 324; 200/181; 340/365 A

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Primary Examiner—Mark O. Budd

Attorney, Agent, or Firm—Fulwider, Patton, Rieber, Lee & Utecht

[57] **ABSTRACT**

An environmentally sealed sensing assembly for an electrical switch for use in adverse conditions such as a warm and humid location. The sensing assembly comprises a piezoelectric element carried by a relatively thin, flexible member supported at its edges within a recess formed in an enclosure. The enclosure includes a cavity in communication with the recess through a flow passage. A resiliently deformable encapsulating or potting material fills the recess, cavity, flow passage and any voids adjacent the piezoelectric element and the flexible member. Flexure of the flexible member through manual pressure or the like, to deform the piezoelectric element, is permitted by resilient deformation or "flow" of the potting compound. The potting material thus provides sealing while yet allowing mechanical movement of the flexible member and associated piezoelectric element. The resulting electrical signal caused by deformation of the piezoelectric element can be conditioned and used for switching electrical devices.

17 Claims, 3 Drawing Figures